THE FILTER BUBBLE

What the Internet Is Hiding from You

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To my grandfather, Ray Pariser, who taught me that scientific knowledge is best used in the pursuit of a better world. And to my community of family and friends, who fill my bubble with intelligence, humor, and love.

market, sites can put the most relevant products up front and whisper to each other behind your back.

The push for relevance gave rise to today's Internet giants, and it is motivating businesses to accumulate ever more data about us and to invisibly tailor our online experiences on that basis. It's changing the fabric of the Web. But as we'll see, the consequences of personalization for how we consume news, make political decisions, and even how we think will be even more dramatic.

The User Is the Content

Everything which bars freedom and fullness of communication sets up barriers that divide human beings into sets and cliques, into antagonistic sects and factions, and thereby undermines the democratic way of life.

—*John Dewey*

The technology will be so good, it will be very hard for people to watch or consume something that has not in some sense been tailored for them.

—*Eric Schmidt*, Google CEO

Microsoft Building 1 in Mountain View, California, is a long, low, gunmetal gray hangar, and if it weren't for the cars buzzing by behind it on Highway 101, you'd almost be able to hear the whine of ultrasonic security. On this Saturday in 2010, the vast expanses of parking lot were empty except for a few dozen BMWs and Volvos. A cluster of scrubby pine trees bent in the gusty wind.

Inside, the concrete-floored hallways were crawling with CEOs in jeans and blazers trading business cards over coffee

and swapping stories about deals. Most hadn't come far; the startups they represented were based nearby. Hovering over the cheese spread was a group of executives from data firms like Acxiom and Experian who had flown in from Arkansas and New York the night before. With fewer than a hundred people in attendance, the Social Graph Symposium nonetheless included the leaders and luminaries of the targeted-marketing field.

A bell rang, the group filed into breakout rooms, and one of the conversations quickly turned to the battle to "monetize content." The picture, the group agreed, didn't look good for newspapers.

The contours of the situation were clear to anyone paying attention: The Internet had delivered a number of mortal blows to the newspaper business model, any one of which might be fatal. Craigslist had made classified advertisements free, and $18 billion in revenue went *poof.* Nor was online advertising picking up the slack. An advertising pioneer once famously said, "Half the money I spend on advertising is wasted—I just don't know which half." But the Internet turned that logic on its head—with click-through rates and other metrics, businesses suddenly knew exactly which half of their money went to waste. And when ads didn't work as well as the industry had promised, advertising budgets were cut accordingly. Meanwhile, bloggers and freelance journalists started to package and produce news content for free, which pressured the papers to do the same online.

But what most interested the crowd in the room was the fact that the entire premise on which the news business had

been built was changing, and the publishers weren't even paying attention.

The *New York Times* had traditionally been able to command high ad rates because advertisers knew it attracted a premium audience—the wealthy opinion-making elite of New York and beyond. In fact, the publisher had a near monopoly on reaching that group—there were only a few other outlets that provided a direct feed into their homes (and out of their pocketbooks).

Now all that was changing. One executive in the marketing session was especially blunt. "The publishers are losing," he said, "and they will lose, because they just don't get it."

Instead of taking out expensive advertisements in the *New York Times,* it was now possible to track that elite cosmopolitan readership using data acquired from Acxiom or BlueKai. This was, to say the least, a game changer in the business of news. Advertisers no longer needed to pay the *New York Times* to reach *Times* readers: they could target them wherever they went online. The era where you had to develop premium content to get premium audiences, in other words, was coming to a close.

The numbers said it all. In 2003, publishers of articles and videos online received most of each dollar advertisers spent on their sites. Now, in 2010, they only received $.20. The difference was moving to the people who had the data—many of whom were in attendance at Mountain View. A PowerPoint presentation circulating in the industry called out the significance of this change succinctly, describing how "premium publishers [were] losing a key advantage" because advertisers can

now target premium audiences in "other, cheaper places." The take-home message was clear: Users, not sites, were now the focus.

Unless newspapers could think of themselves as behavioral data companies with a mission of churning out information about their readers' preferences—unless, in other words, they could adapt themselves to the personalized, filter-bubble world—they were sunk.

NEWS SHAPES OUR sense of the world, of what's important, of the scale and color and character of our problems. More important, it provides the foundation of shared experience and shared knowledge on which democracy is built. Unless we understand the big problems our societies face, we can't act together to fix them. Walter Lippmann, the father of modern journalism, put it more eloquently: "All that the sharpest critics of democracy have alleged is true, if there is no steady supply of trustworthy and relevant news. Incompetence and aimlessness, corruption and disloyalty, panic and ultimate disaster must come to any people which is denied an assured access to the facts."

If news matters, newspapers matter, because their journalists write most of it. Although the majority of Americans get their news from local and national TV broadcasts, most of the actual reporting and story generation happens in newspaper newsrooms. They're the core creators of the news economy. Even in 2010, blogs remain incredibly reliant on them: according to Pew Research Center's Project for Excellence in Journalism,

99 percent of the stories linked to in blog posts come from newspapers and broadcast networks, and the *New York Times* and *Washington Post* alone account for nearly 50 percent of all blog links. While rising in importance and influence, net-native media still mostly lack the capacity to shape public life that these papers and a few other outlets like the BBC and CNN have.

But the shift is coming. The forces unleashed by the Internet are driving a radical transformation in who produces news and how they do it. Whereas once you had to buy the whole paper to get the sports section, now you can go to a sports-only Web site with enough new content each day to fill ten papers. Whereas once only those who could buy ink by the barrel could reach an audience of millions, now anyone with a laptop and a fresh idea can.

If we look carefully, we can begin to project the outline of the new constellation that's emerging. This much we know:

- The cost of producing and distributing media of all kinds—words, images, video, and audio streams—will continue to fall closer and closer to zero.
- As a result, we'll be deluged with choices of what to pay attention to—and we'll continue to suffer from "attention crash." This makes curators all the more important. We'll rely ever more heavily on human and software curators to determine what news we should consume.
- Professional human editors are expensive, and code is cheap. Increasingly, we'll rely on a mix of nonprofessional editors (our friends and colleagues) and software code to figure out

what to watch, read, and see. This code will draw heavily on the power of personalization and displace professional human editors.

Many Internet watchers (myself included) cheered the development of "people-powered news"—a more democratic, participatory form of cultural storytelling. But the future may be more machine-powered than people-powered. And many of the breakthrough champions of the people-powered viewpoint tell us more about our current, transitional reality than the news of the future. The story of "Rathergate" is a classic example of the problem.

When CBS News announced nine weeks before the 2004 election that it had papers proving that President Bush had manipulated his military record, the assertion seemed as though it might be the turning point for the Kerry campaign, which had been running behind in the polls. The viewership for *60 Minutes Wednesday* was high. "Tonight, we have new documents and new information on the President's military service and the first-ever interview with the man who says he pulled the strings to get young George W. Bush into the Texas Air National Guard," Dan Rather said somberly as he laid out the facts.

That night, as the *New York Times* was preparing its headline on the story, a lawyer and conservative activist named Harry MacDougald posted to a right-wing forum called Freerepublic .com. After looking closely at the typeface of the documents, MacDougald was convinced that there was something fishy going on. He didn't beat around the bush: "I am saying these

documents are forgeries, run through a copier for 15 generations to make them look old," he wrote. "This should be pursued aggressively."

MacDougald's post quickly attracted attention, and the discussion about the forgeries jumped to two other blog communities, *Powerline* and *Little Green Footballs*, where readers quickly discovered other anachronistic quirks. By the next afternoon, the influential *Drudge Report* had the campaign reporters talking about the validity of the documents. And the following day, September 10, the Associated Press, *New York Times*, *Washington Post*, and other outlets all carried the story: CBS's scoop might not be true. By September 20, the president of CBS News had issued a statement on the documents: "Based on what we now know, CBS News cannot prove that the documents are authentic. . . . We should not have used them." While the full truth of Bush's military record never came to light, Rather, one of the most prominent journalists in the world, retired in disgrace the next year.

Rathergate is now an enduring part of the mythology about the way blogs and the Internet have changed the game of journalism. No matter where you stand on the politics involved, it's an inspiring tale: MacDougald, an activist on a home computer, discovered the truth, took down one of the biggest figures in journalism, and changed the course of an election.

But this version of the story omits a critical point.

In the twelve days between CBS's airing of the story and its public acknowledgment that the documents were probably fakes, the rest of the broadcast news media turned out reams of reportage. The Associated Press and *USA Today* hired professional

document reviewers who scrutinized every dot and character. Cable news networks issued breathless updates. A striking 65 percent of Americans—and nearly 100 percent of the political and reportorial classes—were paying attention to the story.

It is only because these news sources reached many of the same people who watch CBS News that CBS could not afford to ignore the story. MacDougald and his allies may have lit the match, but it took print and broadcast media to fan the flames into a career-burning conflagration.

Rathergate, in other words, is a good story about how online and broadcast media can interact. But it tells us little or nothing about how news will move once the broadcast era is fully over—and we're moving toward that moment at a breakneck pace. The question we have to ask is, What does news look like in the postbroadcast world? How does it move? And what impact does it have?

If the power to shape news rests in the hands of bits of code, not professional human editors, is the code up to the task? If the news environment becomes so fragmented that MacDougald's discovery can't reach a broad audience, could Rathergate even happen at all?

Before we can answer that question, it's worth quickly reviewing where our current news system came from.

The Rise and Fall of the General Audience

Lippmann, in 1920, wrote that "the crisis in western democracy is a crisis in journalism." The two are inextricably linked,

and to understand the future of this relationship, we have to understand its past.

It's hard to imagine that there was a time when "public opinion" didn't exist. But as late as the mid-1700s, politics was palace politics. Newspapers confined themselves to commercial and foreign news—a report from a frigate in Brussels and a letter from a nobleman in Vienna set in type and sold to the commercial classes of London. Only when the modern, complex, centralized state emerged—with private individuals rich enough to lend money to the king—did forward-looking officials realize that the views of the people outside the walls had begun to matter.

The rise of the public realm—and news as its medium—was partly driven by the emergence of new, complex societal problems, from the transport of water to the challenges of empire, that transcended the narrow bounds of individual experience. But technological changes also made an impact. After all, how news is conveyed profoundly shapes what is conveyed.

While the spoken word is always directed to a specific audience, the written word—and especially the printing press—changed all that. In a real sense, it made the general audience possible. This ability to address a broad, anonymous group fueled the Enlightenment era, and thanks to the printing press, scientists and scholars could spread complex ideas with perfect precision to an audience spread over large distances. And because everyone was literally on the same page, transnational conversations began that would have been impossibly laborious in the earlier scribe-driven epoch.

In the American colonies, the printing industry developed at

a fierce clip—at the time of the revolution, there was no other place in the world with such a density and variety of newspapers. And while they catered exclusively to the interests of white male landowners, the newspapers nonetheless provided a common language and common arguments for dissent. Thomas Paine's rallying cry, *Common Sense*, helped give the diverse colonies a sense of mutual interest and solidarity.

Early newspapers existed to provide business owners with information about market prices and conditions, and newspapers depended on subscription and advertising revenues to survive. It wasn't until the 1830s and the rise of the "penny press"—cheap newspapers sold as one-offs on the street—that everyday citizens in the United States became a primary constituency for news. It was at this point that newspapers came to carry what we think of as news today.

The small, aristocratic public was transforming into a general public. The middle class was growing, and because middle-class people had both a day-to-day stake in the life of the nation and the time and money to spend on entertainment, they were hungry for news and spectacle. Circulation skyrocketed. And as education levels went up, more people came to understand the interconnected nature of modern society. If what happened in Russia could affect prices in New York, it was worth following the news from Russia.

But though democracy and the newspaper were becoming ever more intertwined, the relationship wasn't an easy one. After World War I, tensions about what role the newspaper should play boiled over, becoming a matter of great debate among two of the leading intellectual lights of the time, Walter Lippmann and John Dewey.

Lippmann had watched with disgust as newspapers had effectively joined the propaganda effort for World War I. In *Liberty and the News*, a book of essays published in 1921, he angrily assailed the industry. He quoted an editor who had written that in the service of the war, "governments conscripted public opinion. . . . They goose-stepped it. They taught it to stand at attention and salute."

Lippmann wrote that so long as newspapers existed and they determined "by entirely private and unexamined standards, no matter how lofty, what [the average citizen] shall know, and hence what he shall believe, no one will be able to say that the substance of democratic government is secure."

Over the next decade, Lippmann advanced his line of thought. Public opinion, Lippmann concluded, was too malleable—people were easily manipulated and led by false information. In 1925, he wrote *The Phantom Public*, an attempt to dismantle the illusion of a rational, informed populace once and for all. Lippmann argued against the prevailing democratic mythology, in which informed citizens capably made decisions about the major issues of the day. The "omnicompetent citizens" that such a system required were nowhere to be found. At best, ordinary citizens could be trusted to vote out the party that was in power if it was doing too poorly; the real work of governance, Lippmann argued, should be entrusted to insider experts who had education and expertise to see what was really going on.

John Dewey, one of the great philosophers of democracy, couldn't pass up the opportunity to engage. In The Public and Its Problems, a series of lectures Dewey gave in response to Lippmann's book, he admitted that many of Lippmann's

critiques were not wrong. The media were able to easily manipulate what people thought. Citizens were hardly informed enough to properly govern.

However, Dewey argued, to accept Lippmann's proposal was to give up on the promise of democracy—an ideal that had not yet fully been realized but might still be. "To learn to be human," Dewey argued, "is to develop through the give and take of communication an effective sense of being an individually distinctive member of a community." The institutions of the 1920s, Dewey said, were closed off—they didn't invite democratic participation. But journalists and newspapers could play a critical role in this process by calling out the citizen in people—reminding them of their stake in the nation's business.

While they disagreed on the contours of the solution, Dewey and Lippmann did fundamentally agree that news making was a fundamentally political and ethical enterprise—and that publishers had to handle their immense responsibility with great care. And because the newspapers of the time were making money hand over fist, they could afford to listen. At Lippmann's urging, the more credible papers built a wall between the business portion of their papers and the reporting side. They began to champion objectivity and decry tilted reporting. It's this ethical model—one in which newspapers have a responsibility to both neutrally inform and convene the public—which guided the aspirations of journalistic endeavors for the last half century.

Of course, news agencies have frequently fallen short of these lofty goals—and it's not always clear how hard they even

try. Spectacle and profit seeking frequently win out over good journalistic practice; media empires make reporting decisions to placate advertisers; and not every outlet that proclaims itself "fair and balanced" actually is.

Thanks to critics like Lippmann, the present system has a sense of ethics and public responsibility baked in, however imperfectly. But though it's playing some of the same roles, the filter bubble does not.

A New Middleman

New York Times critic Jon Pareles calls the 2000s the disintermediation decade. *Disintermediation*—the elimination of middlemen—is "the thing that the Internet does to every business, art, and profession that aggregates and repackages," wrote protoblogger Dave Winer in 2005. "The great virtue of the Internet is that it erodes power," says the Internet pioneer Esther Dyson. "It sucks power out of the center, and takes it to the periphery, it erodes the power of institutions over people while giving to individuals the power to run their own lives."

The disintermediation story was repeated hundreds of times, on blogs, in academic papers, and on talk shows. In one familiar version, it goes like this: Once upon a time, newspaper editors woke up in the morning, went to work, and decided what we should think. They could do this because printing presses were expensive, but it became their explicit ethos: As newspapermen, it was their paternalistic duty to feed the citizenry a healthy diet of coverage.

Many of them meant well. But living in New York and Washington, D.C., they were enthralled by the trappings of power. They counted success by the number of insider cocktail parties they were invited to, and the coverage followed suit. The editors and journalists became embedded in the culture they were supposed to cover. And as a result, powerful people got off the hook, and the interests of the media tilted against the interests of everyday folk, who were at their mercy.

Then the Internet came along and disintermediated the news. All of a sudden, you didn't have to rely on the *Washington Post*'s interpretation of the White House press briefing—you could look up the transcript yourself. The middleman dropped out—not just in news, but in music (no more need for *Rolling Stone*—you could now hear directly from your favorite band) and commerce (you could follow the Twitter feed of the shop down the street) and nearly everything else. The future, the story says, is one in which we go direct.

It's a story about efficiency and democracy. Eliminating the evil middleman sitting between us and what we want sounds good. In a way, disintermediation is taking on the idea of media itself. The word *media*, after all, comes from the Latin for "middle layer." It sits between us and the world; the core bargain is that it will connect us to what's happening but at the price of direct experience. Disintermediation suggests we can have both.

There's some truth to the description, of course. But while enthrallment to the gatekeepers is a real problem, disintermediation is as much mythology as fact. Its effect is to make the new mediators—the new gatekeepers—invisible. "It's about the

many wresting power from the few," *Time* magazine announced when it made "you" the person of the year. But as law professor and *Master Switch* author Tim Wu says, "The rise of networking did not eliminate intermediaries, but rather changed who they are." And while power moved toward consumers, in the sense that we have exponentially more choice about what media we consume, the power still isn't held by consumers.

Most people who are renting and leasing apartments don't "go direct"—they use the intermediary of craigslist. Readers use Amazon.com. Searchers use Google. Friends use Facebook. And these platforms hold an immense amount of power—as much, in many ways, as the newspaper editors and record labels and other intermediaries that preceded them. But while we've raked the editors of the *New York Times* and the producers of CNN over the coals for the stories they've missed and the interests they've served, we've given very little scrutiny to the interests behind the new curators.

In July 2010, Google News rolled out a personalized version of its popular service. Sensitive to concerns about shared experience, Google made sure to highlight the "top stories" that are of broad, general interest. But look below that top band, and you will see only stories that are locally and personally relevant to you, based on the interests that you've demonstrated through Google and what articles you've clicked on in the past. Google's CEO doesn't beat around the bush when he describes where this is all headed: "Most people will have personalized news-reading experiences on mobile-type devices that will largely replace their traditional reading of newspapers," he tells an interviewer. "And that that kind of news consumption will be

very personal, very targeted. It will remember what you know. It will suggest things that you might want to know. It will have advertising. Right? And it will be as convenient and fun as reading a traditional newspaper or magazine."

Since Krishna Bharat created the first prototype of Google News to monitor worldwide coverage after 9/11, Google News has become one of the top global portals for news. Tens of millions of visitors pull up the site each month—more than visit the BBC. Speaking at the IJ-7 Innovation Journalism conference at Stanford—to a room full of fairly anxious newspaper professionals—Bharat laid out his vision: "Journalists," Bharat explained, "should worry about creating the content and other people in technology should worry about bringing the content to the right group—given the article, what's the best set of eyeballs for it, and that can be solved by personalization."

In many ways, Google News is still a hybrid model, driven in part by the judgment of a professional editorial class. When a Finnish editor asked Bharat what determines the priority of stories, he emphasized that newspaper editors themselves still have disproportionate control: "We pay attention," he said, "to the editorial decisions that different editors have made: what your paper chose to cover, when you published it, and where you placed it on your front page." *New York Times* editor Bill Keller, in other words, still has a disproportionate ability to affect a story's prominence on Google News.

It's a tricky balance: On the one hand, Bharat tells an interviewer, Google should promote what the reader enjoys reading. But at the same time, overpersonalization that, for example, excludes important news from the picture would be a disaster.

Bharat doesn't seem to have fully resolved the dilemma, even for himself. "I think people care about what other people care about, what other people are interested in—most important, their social circle," he says.

Bharat's vision is to move Google News off Google's site and onto the sites of other content producers. "Once we get personalization working for news," Bharat tells the conference, "we can take that technology and make it available to publishers, so they can [transform] their website appropriately" to suit the interests of each visitor.

Krishna Bharat is in the hot seat for a good reason. While he's respectful to the front page editors who pepper him with questions, and his algorithm depends on their expertise, Google News, if it's successful, may ultimately put a lot of front-page editors out of work. Why visit your local paper's Web site, after all, if Google's personalized site has already pulled the best pieces?

The Internet's impact on news was explosive in more ways than one. It expanded the news space by force, sweeping older enterprises out of its path. It dismantled the trust that news organizations had built. In its wake lies a more fragmented and shattered public space than the one that came before.

It's no secret that trust in journalists and news providers has plummeted in recent years. But the shape of the curve is mysterious: According to a Pew poll, Americans lost more faith in news agencies between 2007 and 2010 than they did in the prior twelve years. Even the debacle over Iraq's WMDs didn't make much of a dent in the numbers—but whatever happened in 2007 did.

While we still don't have conclusive proof, it appears that this, too, is an effect of the Internet. When you're getting news from one source, the source doesn't draw your attention much to its own errors and omissions. Corrections, after all, are buried in tiny type on an inside page. But as masses of news readers went online and began to hear from multiple sources, the differences in coverage were drawn out and amplified. You don't hear about the *New York Times*'s problems much from the *New York Times*—but you do hear about them from political blogs, like the *Daily Kos* or *Little Green Footballs*, and from groups on both sides of the spectrum, like MoveOn or RightMarch. More voices, in other words, means less trust in any given voice.

As Internet thinker Clay Shirky has pointed out, the new, low trust levels may not be inappropriate. It may be that the broadcast era kept trust artificially high. But as a consequence, for most of us now, the difference in authority between a blog post and an article in the *New Yorker* is much smaller than one would think.

Editors at Yahoo News, the biggest news site on the Internet, can see this trend in action. With over 85 million daily visitors, when Yahoo links to articles on other servers—even those of nationally known papers—it has to give technicians advance warning so that they can handle the load. A single link can generate up to 12 million views. But according to an executive in the news department, it doesn't matter much to Yahoo's users where the news is coming from. A spicy headline will win over a more trusted news source any day. "People don't make much of a distinction between the *New York Times* and some random blogger," the executive told me.

This is Internet news: Each article ascends the most-forwarded lists or dies an ignominious death on its own. In the old days, *Rolling Stone* readers would get the magazine in the mail and leaf through it; now, the popular stories circulate online independent of the magazine. I read the exposé on General Stanley McChrystal but had no idea that the cover story was about Lady Gaga. The attention economy is ripping the binding, and the pages that get read are the pages that are frequently the most topical, scandalous, and viral.

Nor is debundling just about print media. While the journalistic hand-wringing has focused mostly on the fate of the newspaper, TV channels face the same dilemma. From Google to Microsoft to Comcast, executives are quite clear that what they call convergence is coming soon. Close to a million Americans are unplugging from cable TV offerings and getting their video online every year—and those numbers will accelerate as more services like Netflix's movie-on-demand and Hulu go online. When TV goes fully digital, channels become little more than brands—and the order of programs, like the order of articles, is determined by the user's interest and attention, not the station manager.

And of course, that opens the door for personalization. "Internet connected TV is going to be a reality. It will dramatically change the ad industry forever. Ads will become interactive and delivered to individual TV sets according to the user," Google VP for global media Henrique de Castro has said. We may say good-bye, in other words, to the yearly ritual of the Super Bowl commercial, which won't create the same buzz when everyone is watching different ads.

If trust in news agencies is falling, it is rising in the new realm of amateur and algorithmic curation. If the newspaper and magazine are being torn apart on one end, the pages are being recompiled on the other—a different way every time. Facebook is an increasingly vital source of news for this reason: Our friends and family are more likely to know what's important and relevant to us than some newspaper editor in Manhattan.

Personalization proponents often point to social media like Facebook to dispute the notion that we'll end up in a narrow, overfiltered world. Friend your softball buddy on Facebook, the argument goes, and you'll have to listen to his political rants even if you disagree.

Since they have trust, it's true that the people we know can bring some focus to topics outside our immediate purview. But there are two problems with relying on a network of amateur curators. First, by definition, the average person's Facebook friends will be much more like that person than a general-interest news source. This is especially true because our physical communities are becoming more homogeneous as well—and we generally know people who live near us. Because your softball buddy lives near you, he's likely to share many of your views. It's ever less likely that we'll come to be close with people very different from us, online or off—and thus it's less likely we'll come into contact with different points of view.

Second, personalization filters will get better and better at overlaying themselves on individuals' recommendations. Like your friend Sam's posts on football but not his erratic musings on *CSI*? A filter watching and learning which pieces of content

you interact with can start to sift one from another—and undermine even the limited leadership that a group of friends and pundits can offer. Google Reader, another product from Google that helps people manage streams of posts from blogs, now has a feature called Sort by Magic, which does precisely this.

This leads to the final way in which the future of media is likely to be different than we expected. Since its early days, Internet evangelists have argued that it was an inherently active medium. "We think basically you watch television to turn your brain off, and you work on your computer when you want to turn your brain on," Apple founder Steve Jobs told *Macworld* in 2004.

Among techies, these two paradigms came to be known as push technology and pull technology. A Web browser is an example of pull technology: You put in an address, and your computer pulls information from that server. Television and the mail, on the other hand, are push technologies: The information shows up on the tube or at your doorstop without any action on your end. Internet enthusiasts were excited about the shift from push to pull for reasons that are now pretty obvious: Rather than wash the masses in waves of watered-down, lowest-common-denominator content, pull media put users in control.

The problem is that pull is actually a lot of work. It requires you to be constantly on your feet, curating your own media experience. That's way more energy than TV requires during the whopping thirty-six hours a week that Americans watch today.

In TV network circles, there's a name for the passive way with which Americans make most of those viewing decisions: the theory of least objectionable programming. Researching TV viewers' behavior in the 1970s, pay-per-view innovator Paul Klein noticed that people quit channel surfing far more quickly than one might suspect. During most of those thirty-six hours a week, the theory suggests, we're not looking for a program in particular. We're just looking to be unobjectionably entertained.

This is part of the reason TV advertising has been such a bonanza for the channel's owners. Because people watch TV passively, they're more likely to keep watching when ads come on. When it comes to persuasion, passive is powerful.

While the broadcast TV era may be coming to a close, the era of least objectionable programming probably isn't—and personalization stands to make the experience even more, well, unobjectionable. One of YouTube's top corporate priorities is the development of a product called LeanBack, which strings together videos in a row to provide the benefits of push and pull. It's less like surfing the Web and more like watching TV—a personalized experience that lets the user do less and less. Like the music service Pandora, LeanBack viewers can easily skip videos and give the viewer feedback for picking the next videos—thumbs up for this one, thumbs down for these three. LeanBack would learn. Over time, the vision is for LeanBack to be like your own personal TV channel, stringing together content you're interested in while requiring less and less engagement from you.

Steve Jobs's proclamation that computers are for turning

your brain on may have been a bit too optimistic. In reality, as personalized filtering gets better and better, the amount of energy we'll have to devote to choosing what we'd like to see will continue to decrease.

And while personalization is changing our experience of news, it's also changing the economics that determine what stories get produced.

The Big Board

The offices of Gawker Media, the ascendant blog empire based in SoHo, look little like the newsroom of the *New York Times* a few miles to the north. But the driving difference between the two is the flat-screen TV that hovers over the room.

This is the Big Board, and on it are a list of articles and numbers. The numbers represent the number of times each article has been read, and they're big: Gawker's Web sites routinely see hundreds of millions of page views a month. The Big Board captures the top posts across the company's Web sites, which focus on everything from media (Gawker) to gadgets (Gizmodo) to porn (Fleshbot). Write an article that makes it onto the Big Board, and you're liable to get a raise. Stay off it for too long, and you may need to find a different job.

At the *New York Times*, reporters and bloggers aren't allowed to see how many people click on their stories. This isn't just a rule, it's a philosophy that the *Times* lives by: The point of being the newspaper of record is to provide readers with the benefit of excellent, considered editorial judgment. "We don't

let metrics dictate our assignments and play," *New York Times* editor Bill Keller said, "because we believe readers come to us for our judgment, not the judgment of the crowd. We're not 'American Idol.'" Readers can vote with their feet by subscribing to another paper if they like, but the *Times* doesn't pander. Younger *Times* writers who are concerned about such things have to essentially bribe the paper's system administrators to give them a peek at their stats. (The paper does use aggregate statistics to determine which online features to expand or cut.)

If the Internet's current structures mostly tend toward fragmentation and local homogeneity, there is one exception: The only thing that's better than providing articles that are relevant to you is providing articles that are relevant to everyone. Traffic watching is a new addiction for bloggers and managers—and as more sites publish their most-popular lists, readers can join in the fun too.

Of course, journalistic traffic chasing isn't exactly a new phenomenon: Since the 1800s, papers have boosted their circulations with sensational reports. Joseph Pulitzer, in honor of whom the eponymous prizes are awarded each year, was a pioneer of using scandal, sex, fearmongering, and innuendo to drive sales.

But the Internet adds a new level of sophistication and granularity to the pursuit. Now the *Huffington Post* can put an article on its front page and know within minutes whether it's trending viral; if it is, the editors can kick it by promoting it more heavily. The dashboard that allows editors to watch how stories are doing is considered the crown jewel of the enterprise. Associated Content pays an army of online contributors

small amounts to troll search queries and write pages that answer the most common questions; those whose pages see a lot of traffic share in the advertising revenue. Sites like Digg and Reddit attempt to turn the whole Internet into a most-popular list with increasing sophistication, by allowing users to vote submitted articles from throughout the Web onto the site's front page. Reddit's algorithm even has a kind of physics built into it so that articles that don't receive a constant amount of approval will begin to fade, and its front page mixes the articles the group thinks are most important with your personal preferences and behavior—a marriage of the filter bubble and the most-popular list.

Las Últimas Noticias, a major paper in Chile, began basing its content entirely on what readers clicked on in 2004: Stories with lots of clicks got follow-ups, and stories with no clicks got killed. The reporters don't have beats anymore—they just try to gin up stories that will get clicks.

At Yahoo's popular *Upshot* news blog, a team of editors mine the data produced by streams of search queries to see what terms people are interested in, in real time. Then they produce articles responsive to those queries: When a lot of people search for "Obama's birthday," *Upshot* produces an article in response, and soon the searchers are landing on a Yahoo page and seeing Yahoo advertising. "We feel like the differentiator here, what separates us from a lot of our competitors is our ability to aggregate all this data," the vice president of Yahoo Media told the *New York Times*. "This idea of creating content in response to audience insight and audience needs is one component of the strategy, but it's a big component."

And what tops the traffic charts? "If it bleeds, it leads" is one of the few news maxims that has continued into the new era. Obviously, what's popular differs among audiences: A study of the *Times*'s most-popular list found that articles that touched on Judaism were often forwarded, presumably due to the *Times*'s readership. In addition, the study concluded, "more practically useful, surprising, affect-laden, and positively valenced articles are more likely to be among the newspaper's most e-mailed stories on a given day, as are articles that evoke more awe, anger, and anxiety, and less sadness."

Elsewhere, the items that top most-popular lists get a bit more crass. The site Buzzfeed recently linked to the "headline that has everything" from Britain's *Evening Herald:* "Woman in Sumo Wrestler Suit Assaulted Her Ex-girlfriend in Gay Pub After She Waved at a Man Dressed as a Snickers Bar." The top story in 2005 for the *Seattle Times* stayed on the most-read list for weeks; it concerned a man who died after having sex with a horse. The *Los Angeles Times*'s top story in 2007 was an article about the world's ugliest dog.

Responsiveness to the audience sounds like a good thing—and in a lot of cases, it is. "If we view the role of cultural products as giving us something to talk about," writes a *Wall Street Journal* reporter who looked into the most-popular phenomenon, "then the most important thing might be that everyone sees the same thing and not what the thing is." Traffic chasing takes media making off its Olympian heights, placing journalists and editors on the same plane with everyone else. The *Washington Post* ombudsman described journalists' often paternalistic approach to readers: "In a past era, there was little

need to share marketing information with the *Post*'s newsroom. Profits were high. Circulation was robust. Editors decided what they thought readers needed, not necessarily what they wanted."

The Gawker model is almost the precise opposite. If the *Washington Post* emulates Dad, these new enterprises are more like fussy, anxious children squalling to be played with and picked up.

When I asked him about the prospects for important but unpopular news, the Media Lab's Nicholas Negroponte smiled. On one end of the spectrum, he said, is sycophantic personalization—"You're so great and wonderful, and I'm going to tell you exactly what you want to hear." On the other end is the parental approach: "I'm going to tell you this whether you want to hear this or not, because you need to know." Currently, we're headed in the sycophantic direction. "There will be a long period of adjustment," says Professor Michael Schudson, "as the separation of church and state is breaking down, so to speak. In moderation, that seems okay, but Gawker's Big Board is a scary extreme, it's surrender."

Of Apple and Afghanistan

Google News pays more attention to political news than many of the creators of the filter bubble. After all, it draws in large part on the decisions of professional editors. But even in Google News, stories about Apple trump stories about the war in Afghanistan.

I enjoy my iPhone and iPad, but it's hard to argue that these things are of similar importance to developments in Afghanistan. But this Apple-centric ranking is indicative of what the combination of popular lists and the filter bubble will leave out: Things that are important but complicated. "If traffic ends up guiding coverage," the *Washington Post*'s ombudsman writes, "will *The Post* choose not to pursue some important stories because they're 'dull'?"

Will an article about, say, child poverty ever seem hugely personally relevant to many of us, beyond the academics studying the field and the people directly affected? Probably not, but it's still important to know about.

Critics on the left frequently argue that the nation's top media underreport the war. But for many of us, myself included, reading about Afghanistan is a chore. The story is convoluted, confusing, complex, and depressing.

In the editorial judgment of the *Times*, however, I need to know about it, and because they persist in putting it on the front page despite what must be abominably low traffic rates, I continue to read about it. (This doesn't mean the *Times* is overruling my own inclinations. It's just supporting one of my inclinations—to be informed about the world—over the more immediate inclination to click on whatever tickles my fancy.) There are places where media that prioritize importance over popularity or personal relevance are useful—even necessary.

Clay Shirky points out that newspaper readers always mostly skipped over the political stuff. But to do so, they had to at least glance at the front page—and so, if there was a huge political scandal, enough people would know about it to make

an impact at the polls. "The question," Shirky says, "is how can the average citizen ignore news of the day to the ninety-ninth percentile and periodically be alarmed when there is a crisis? How do you threaten business and civic leaders with the possibility that if things get too corrupt, the alarm can be sounded?" The front page played that role—but now it's possible to skip it entirely.

Which brings us back to John Dewey. In Dewey's vision, it is these issues—"indirect, extensive, enduring and serious consequences of conjoint and interacting behavior"—that call the public into existence. The important matters that indirectly touch all of our lives but exist out of the sphere of our immediate self-interest are the bedrock and the raison d'être of democracy. *American Idol* may unite a lot of us around the same fireplace, but it doesn't call out the citizen in us. For better or worse—I'd argue for better—the editors of the old media did.

There's no going back, of course. Nor should there be: the Internet still has the potential to be a better medium for democracy than broadcast, with its one-direction-only information flows, ever could be. As journalist A. J. Liebling pointed out, freedom of the press was for those who owned one. Now we all do.

But at the moment, we're trading a system with a defined and well-debated sense of its civic responsibilities and roles for one with no sense of ethics. The Big Board is tearing down the wall between editorial decision-making and the business side of the operation. While Google and others are beginning to grapple with the consequences, most personalized filters have no

way of prioritizing what really matters but gets fewer clicks. And in the end, "Give the people what they want" is a brittle and shallow civic philosophy.

But the rise of the filter bubble doesn't just affect how we process news. It can also affect how we think.

The Adderall Society

It is hardly possible to overrate the value . . . of placing human beings in contact with persons dissimilar to themselves, and with modes of thought and action unlike those with which they are familiar. . . . Such communication has always been, and is peculiarly in the present age, one of the primary sources of progress.

—John Stuart Mill

The manner in which some of the most important individual discoveries were arrived at reminds one more of a sleepwalker's performance than an electronic brain's.

—Arthur Koestler, The Sleepwalkers

In the spring of 1963, Geneva was swarming with diplomats. Delegations from eighteen countries had arrived for negotiations on the Nuclear Test Ban treaty, and meetings were under way in scores of locations throughout the Swiss capital. After one afternoon of discussions between the American and Russian delegations, a young KGB officer approached a

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Chapter Two: The User Is the Content

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